



Accelerating Telnet Performance in Wireless Networks (with Emulator Express)

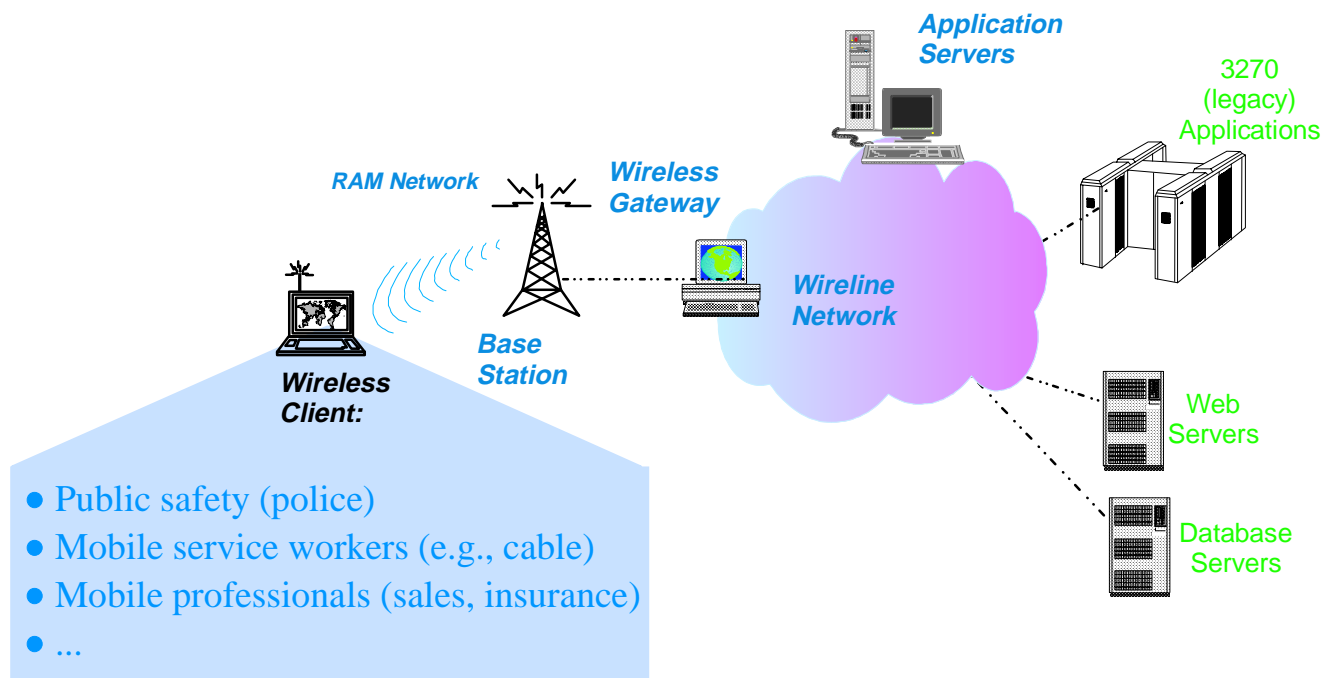
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IBM Corporation
RTP, NC

MobiDE Workshop
Seattle, WA
August 20, 1999

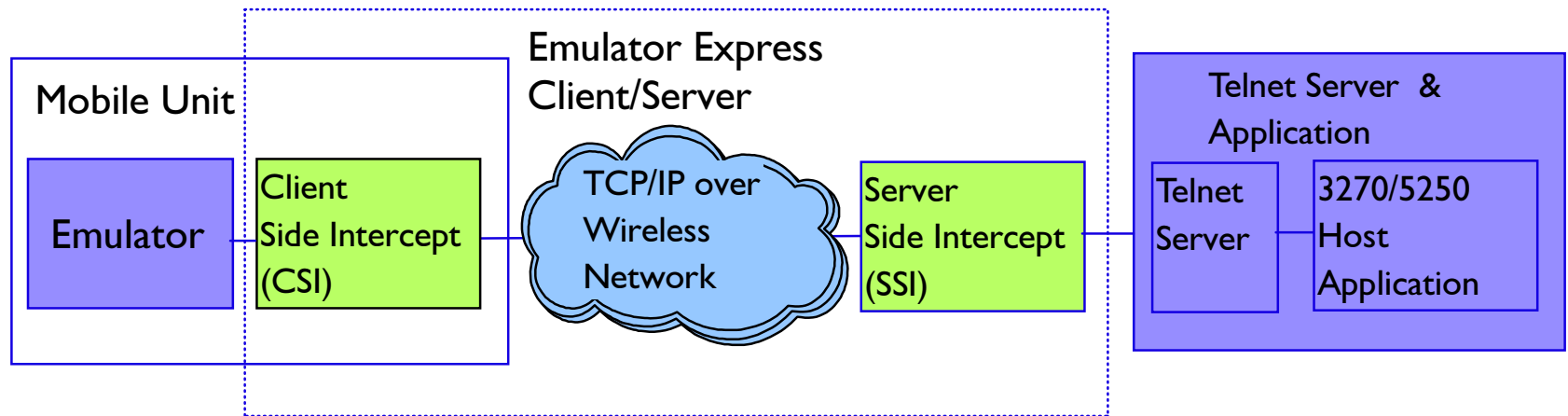


Objective

→ Enable TN3270/TN5250 emulation with reasonable response time over wide-area wireless networks

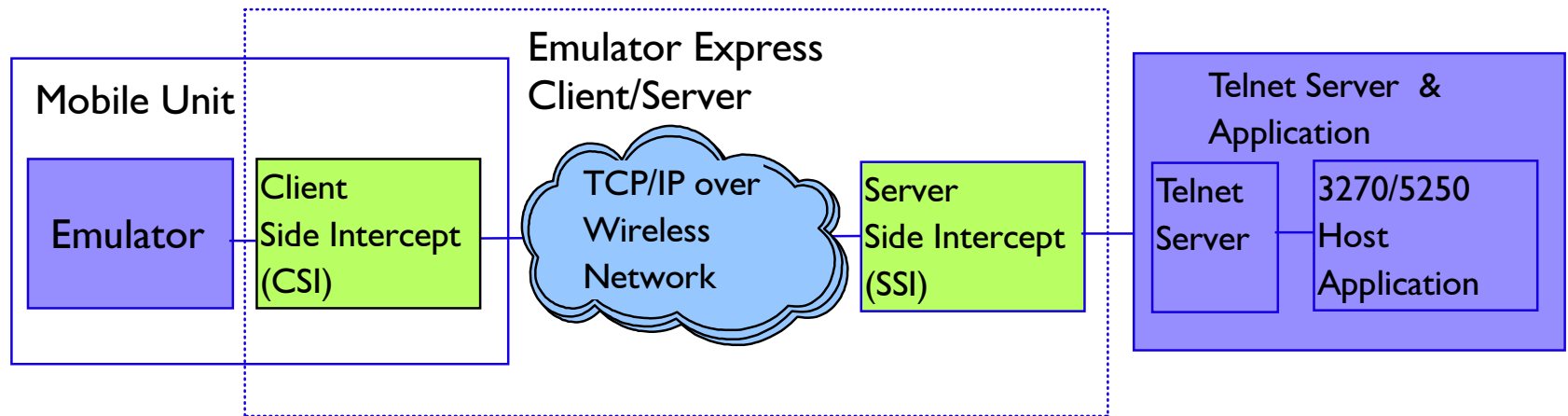


Emulator Express Dual Intercept Model



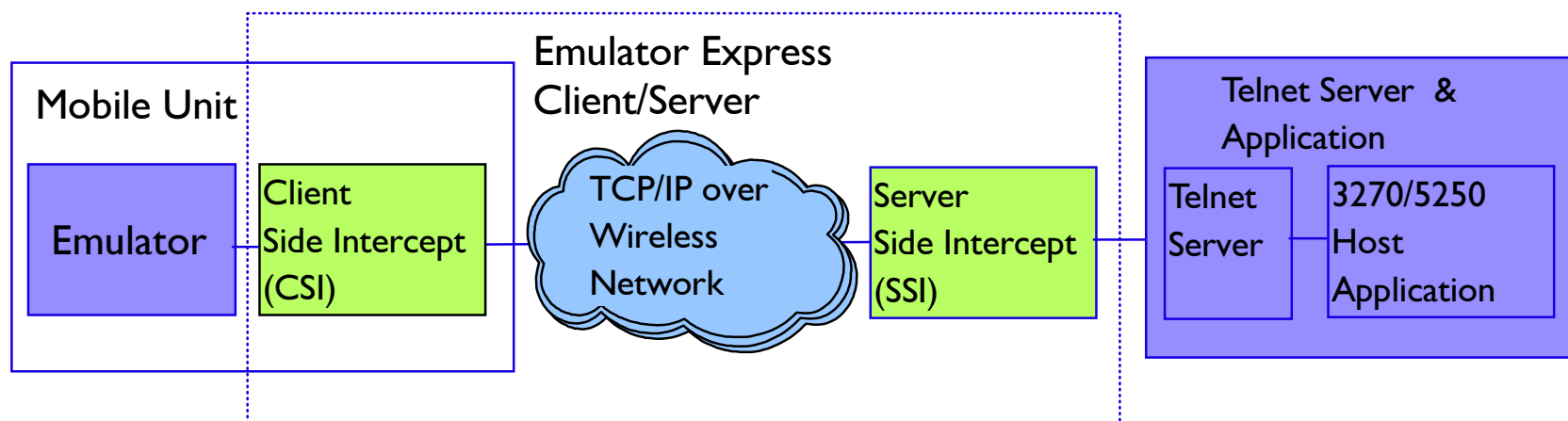
→ CSI-SSI: Private protocol that reduces transport volume and flows

Emulator Express Dual Intercept Model



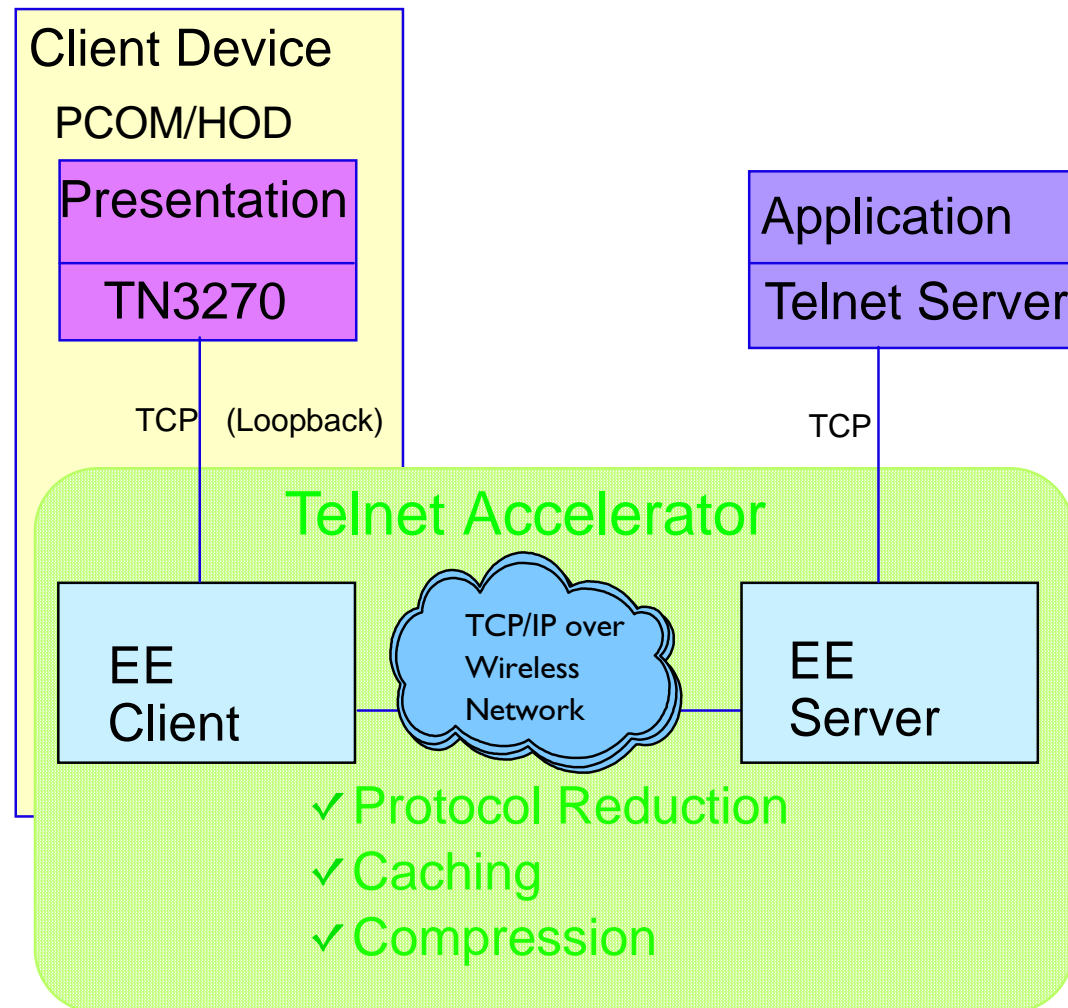
- CSI-SSI: Private protocol that reduces transport volume and flows
- Standard telnet flows to telnet client and server

Emulator Express Dual Intercept Model

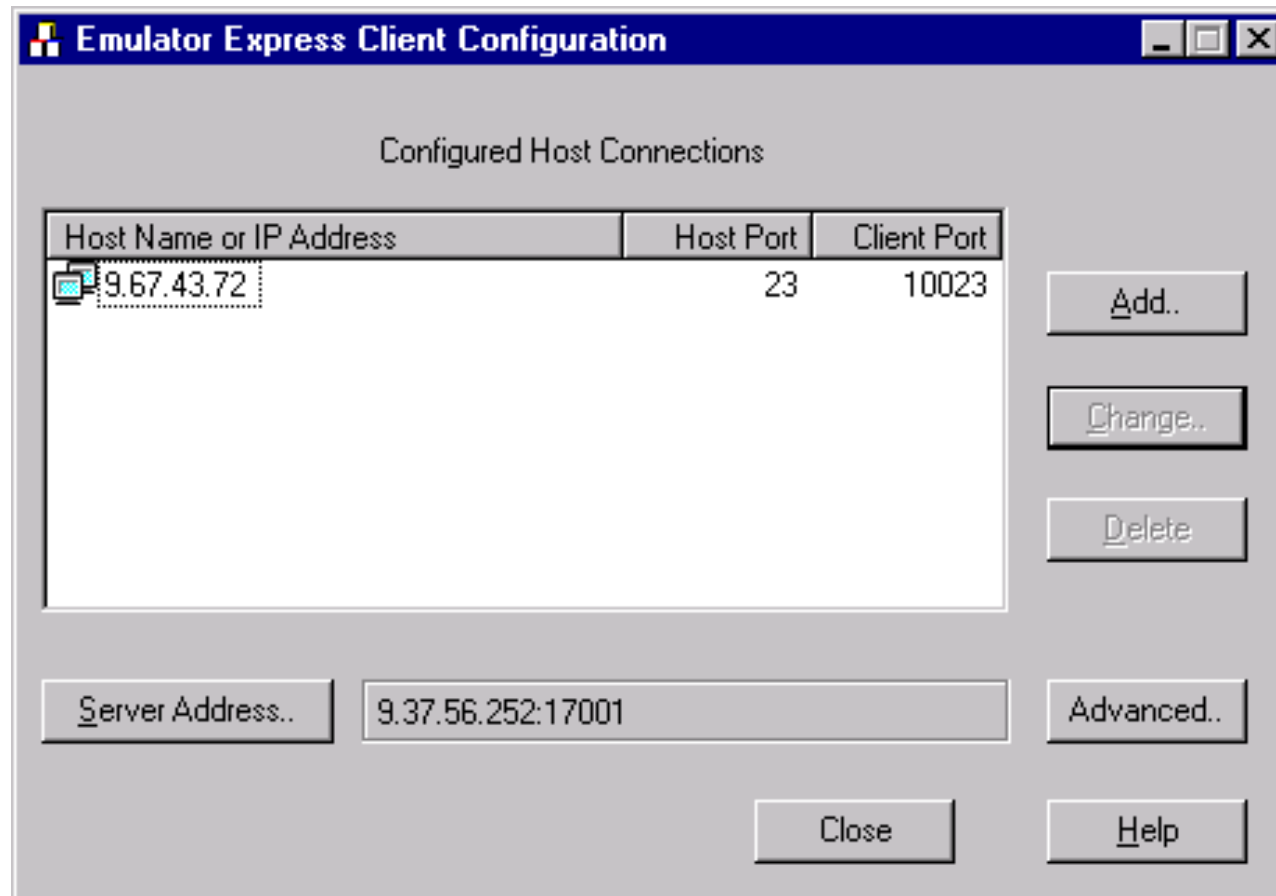


- CSI-SSI: Private protocol that reduces transport volume and flows
- Standard telnet flows to telnet client and server
- Operates with any emulator or telnet server

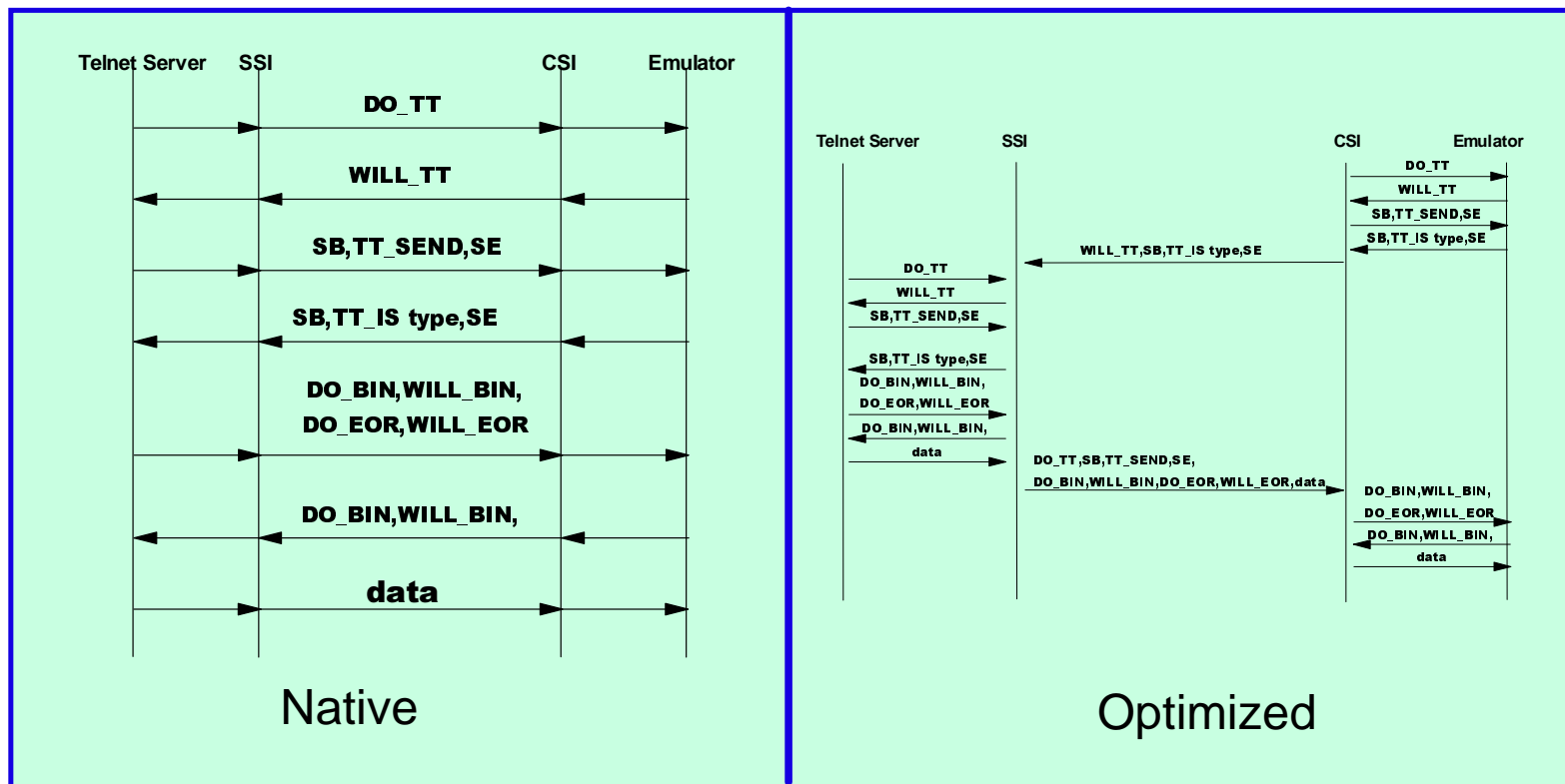
Telnet Accelerator Optimizations



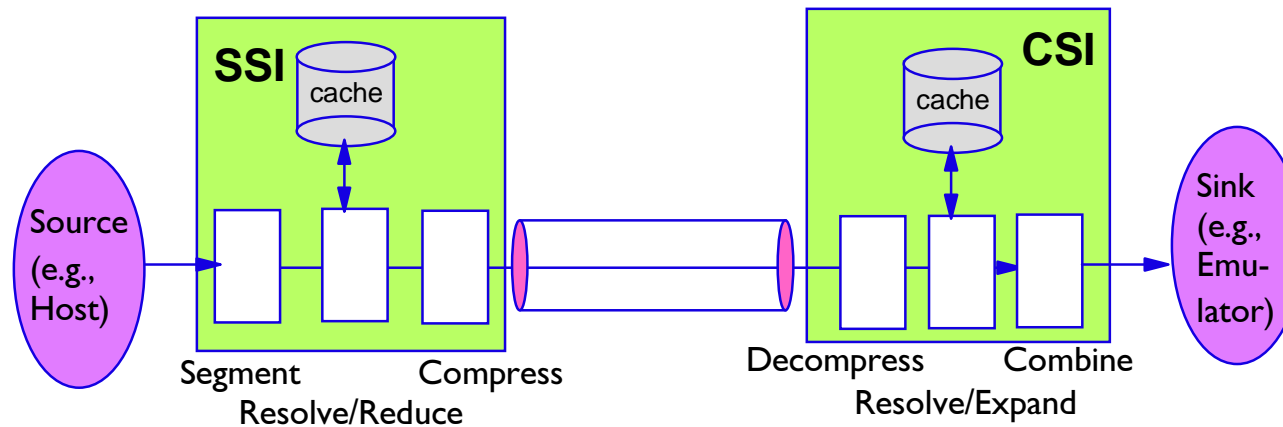
Client Configuration



Protocol Reduction - Optimize negotiations



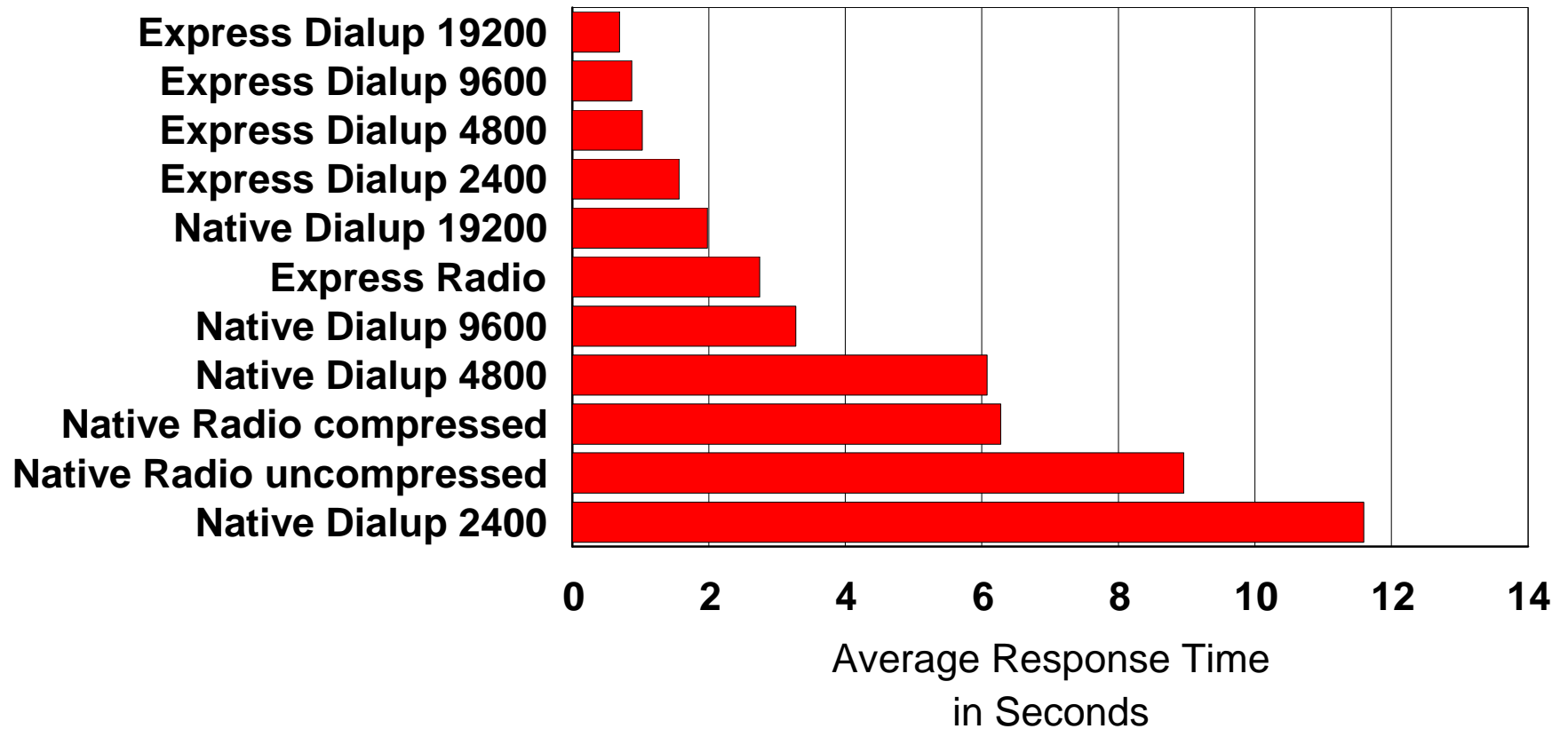
Basic Datastream Caching Model



- Datastream specific segmentation
- Persistent cache
 - By application port
 - Periodic checkpoints
 - LRU
- Multiple sessions per application port
- Traditional compression
 - Arithmetic, Lempel-Ziv, ...

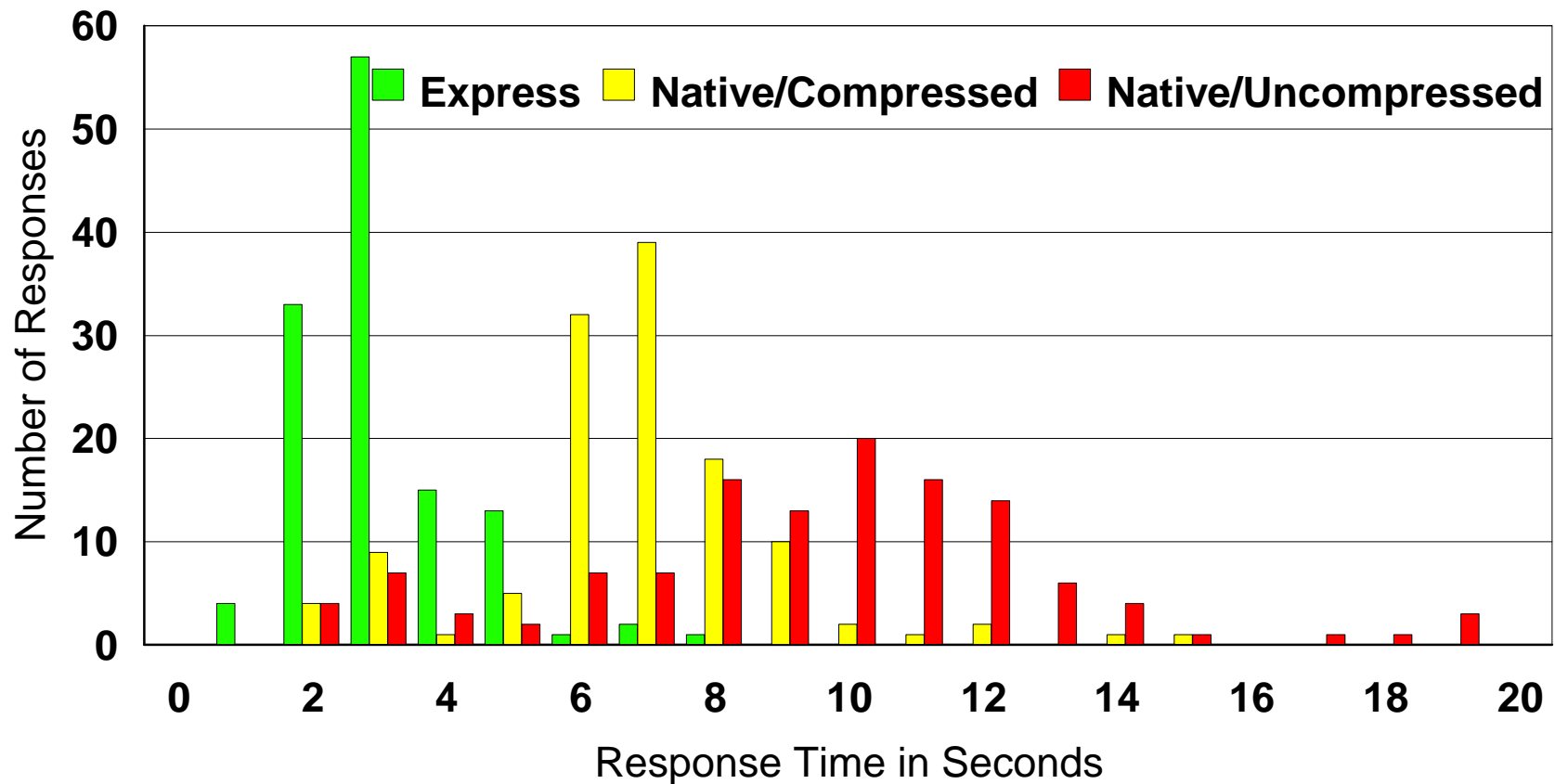
Performance Measurements

Response Time Comparison



Performance Measurements ...

Distribution of Radio Response Times



Conclusions

- ▲ Extremely effective
- ▲ Data payload (excluding TCP headers)
 - Frequently 10:1 reduction outbound in customer production environments
 - Between 5:1 and 10:1 for IBM mix
- ▲ Total payload (both directions)
 - Almost 5:1 reduction as compared to eNetwork Wireless **with** compression.
 - 50% reduction in number of ARDIS packets